

- **FUTURE INITIATIVES**

Function: Connect all NRHP sites for telemedicine and interactive education system

Equipment: Interactive video with PC, various diagnostic evaluation equipment and support accessories

Equipment

Cost: Approximately \$70,000 per site. Additional costs include room preparation, ranging from \$10,000 to \$30,000.

Transmission

Line Needs: Multiple switch 56 or fractional T-1
T-1 preferred

Transmission

Costs: Previously described

(exhibit 9 -- rural telemedicine switch 56)

HOW AND WHY NRHP FOCUSED ON THESE FUNCTIONS

- Lack of availability of services locally
- Distance to closest service is tremendous
- Inability to recruit needed personnel and services
- Medical liability issues
- Professional licensure and certification requirements becoming more restrictive
- Need to maintain adequate, yet cost effective, health care system locally to support community's economic viability

ISSUES FOR NRHP TO OVERCOME: PAST AND PRESENT

- Transmission lines -- copper vs. fiber optic
- Transmission method -- switch 56 - ISDN - T-1
- Connectivity cost
- Rate disparity between various communication vendors
- Lack of current definition for "Standard/Universal Service" capability
- Integrate connectivity between multiple phone service vendors
- Lack of urban providers involved in telemedicine, most often due to cost
- Turf issues within University and Community College System of Nevada
- Cost of renovating sites
- Funding dependency
 - federal grants
 - national grants
 - state grants
 - state legislature
 - individual sites (already tax subsidized)

GLOBAL ISSUES AND CONCERNS

- **Universal service definition for**
 - **line;**
 - **transmission;**
 - **installation cost; and**
 - **monthly service cost.**
 - **Update annually based on technology advancement**
- **Interfacing of National and State regulations**
- **Standardize definitions of key regulatory language terms**
 - **"basic service"**
 - **"support"**
 - **"benefit"**
 - **"access"**
- **Encourage State Public Service Commissions to utilize over-earning revenues to meet the "Telecommunications Act of 1996" by building bandwidth and switching infrastructure to rural areas and equipping rural sites with technology to facilitate the Act's objectives.**
- **Regulate:**
 - **access fees**
 - **monthly service charges**
 - **transmission costs for transmission of education or medical services in rural America**
- **Regulations to accommodate intrastate and/or phone company networking**
- **Develop funding support mechanisms**
- **Medical functions and hardware developed in manner to allow for "middleware functionality"**
- **Medical standard of product transmission outcome maintained at adequate level to ensure quality of care; not allow standards to increase so high equipment and transmission costs become prohibitive**
- **Provide for reimbursement of medical provider to help offset cost**

SUMMARY

We at NRHP believe the following are the basic services, functionalities and policy changes needed and should be considered as basic services for the implementation of the "Telecommunications Act of 1996" to meet its objectives for medical and educational applications.

- **FUNCTIONS**

Interactive video for education and medical applications which includes

- Diagnostic functions for
 - Radiology
 - Psychiatric
 - Geriatrics
 - Dermatology
 - Internal Medicine
 - Cardiology
 - Pediatrics
 - Trauma Evaluation
- Education functions for full degrees
 - Nursing
 - Laboratory Technology
 - X-Ray Technology
 - Respiratory Therapy
 - Paramedic
- Continuing education for all licensed medical professions

- **EQUIPMENT AND SITE PREPARATION COSTS**

- Interactive video system with appropriate diagnostic equipment
- \$65,000 to \$100,000 per site

- **TRANSMISSION LINE NEEDS**

Fiber optic lines
Switch 56 to T-1 capabilities

- **INTEGRATION OF EQUIPMENT AND APPLICATIONS**

- **FUNDING SUPPORT**

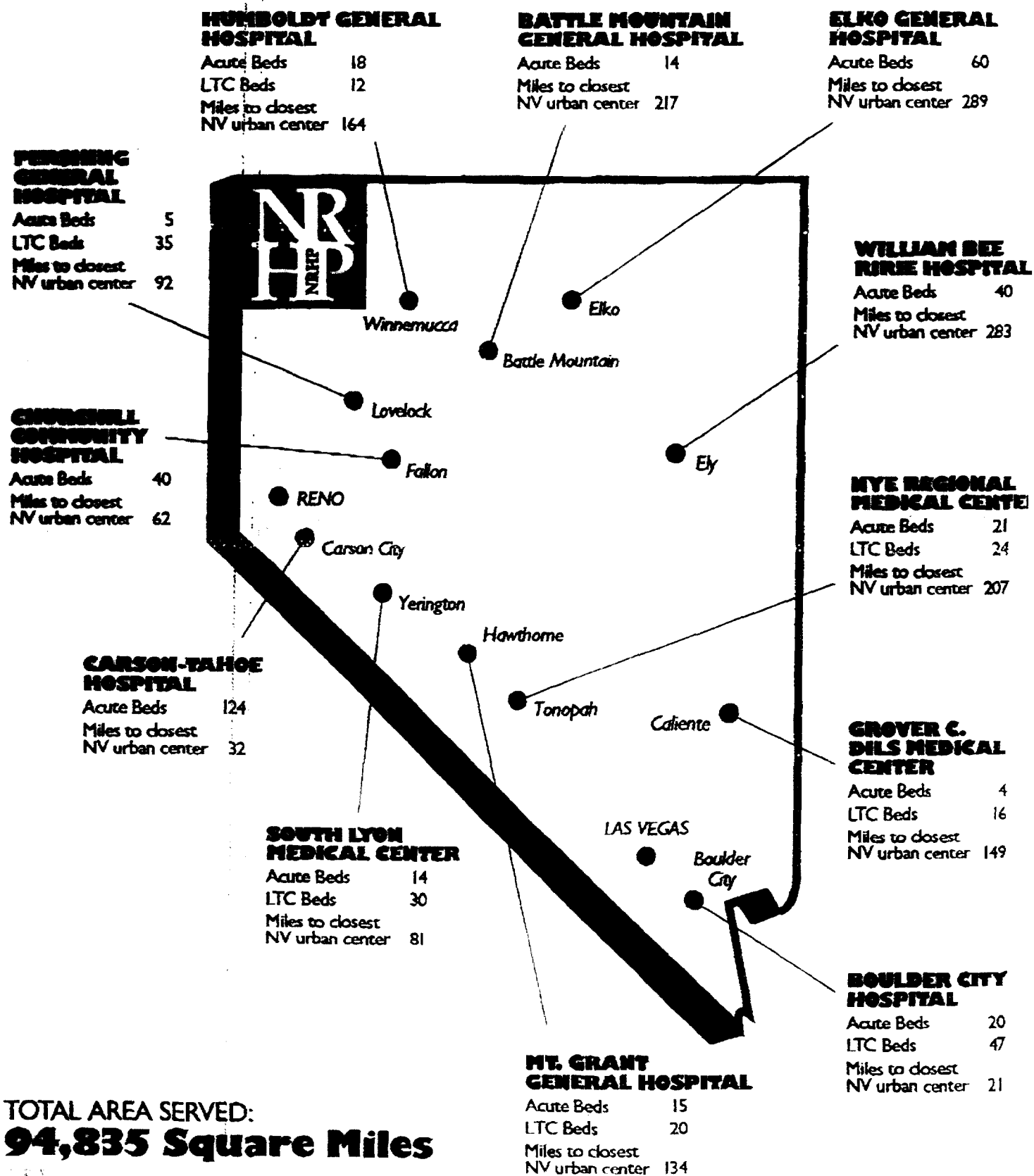
- Federal support grant programs
- Regulate and standardize cost associated with connection, installation, monthly service charge and transmission costs; specifically, for rural programs addressing medical and education programs
- Encourage states to use "over-earning income" (where applicable) to support this effort
- Require reimbursement by third party payors to help cover cost
- Develop or allow a surcharge to help fund the development and ongoing cost of telecommunication system

CLOSING

Thank you for the opportunity to share with you what NRHP is doing with respect to telecommunication applications in medicine and education as well as on our perception of the issues and obstacles needed to be addressed to accomplish our objectives.

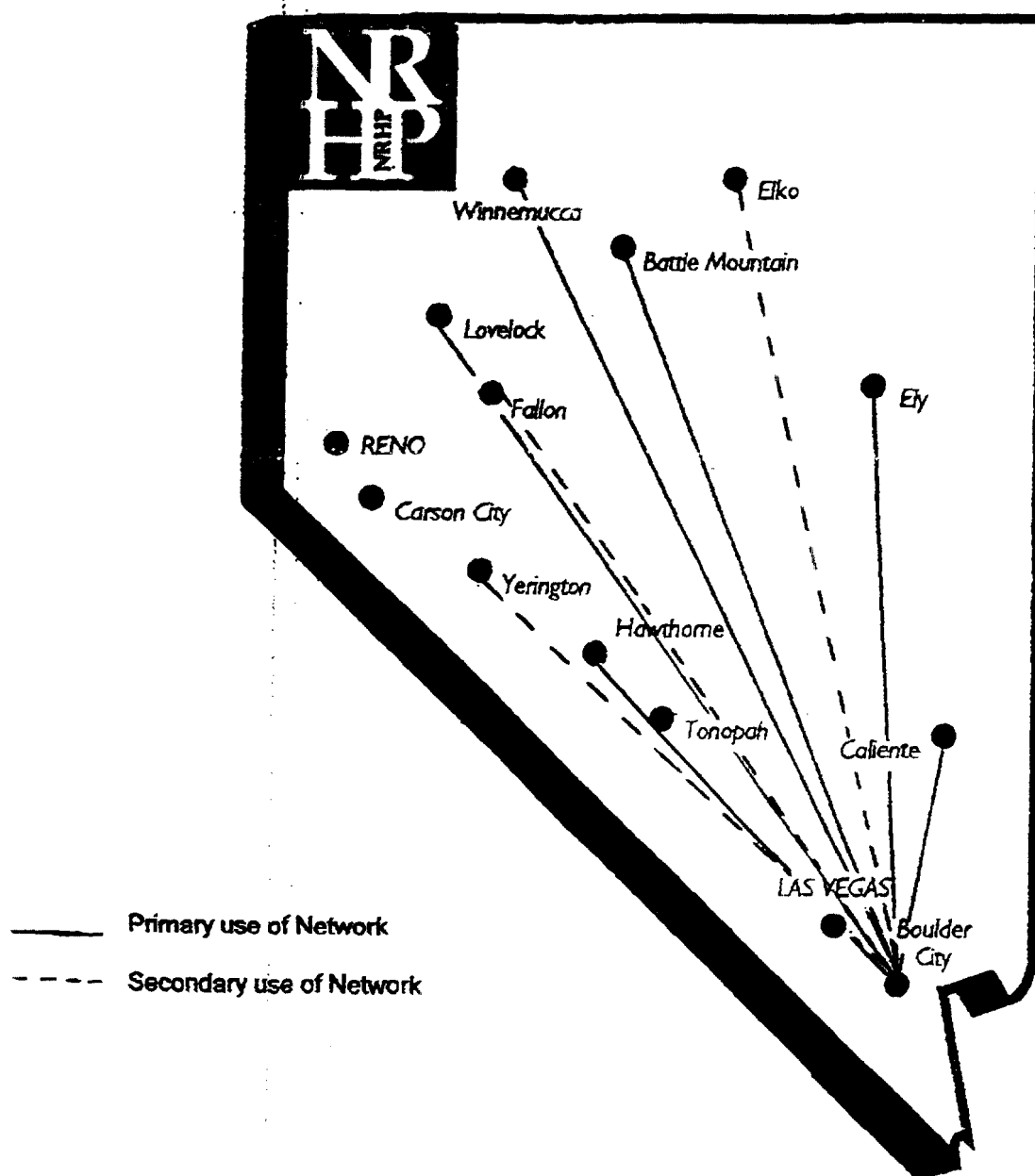
Finally, I want to thank the Federal Communications Commission for my appointment to the Telecommunications and Health Care Advisory Committee. I look forward to participating and contributing to the process of developing policies for the implementation of the "Telecommunications Act of 1996."

NEVADA RURAL HOSPITAL PROJECT CONSORTIUM



NEVADA RURAL HOSPITAL PROJECT CONSORTIUM

Teleradiology Network



TOTAL AREA SERVED:

93,000 Square Miles

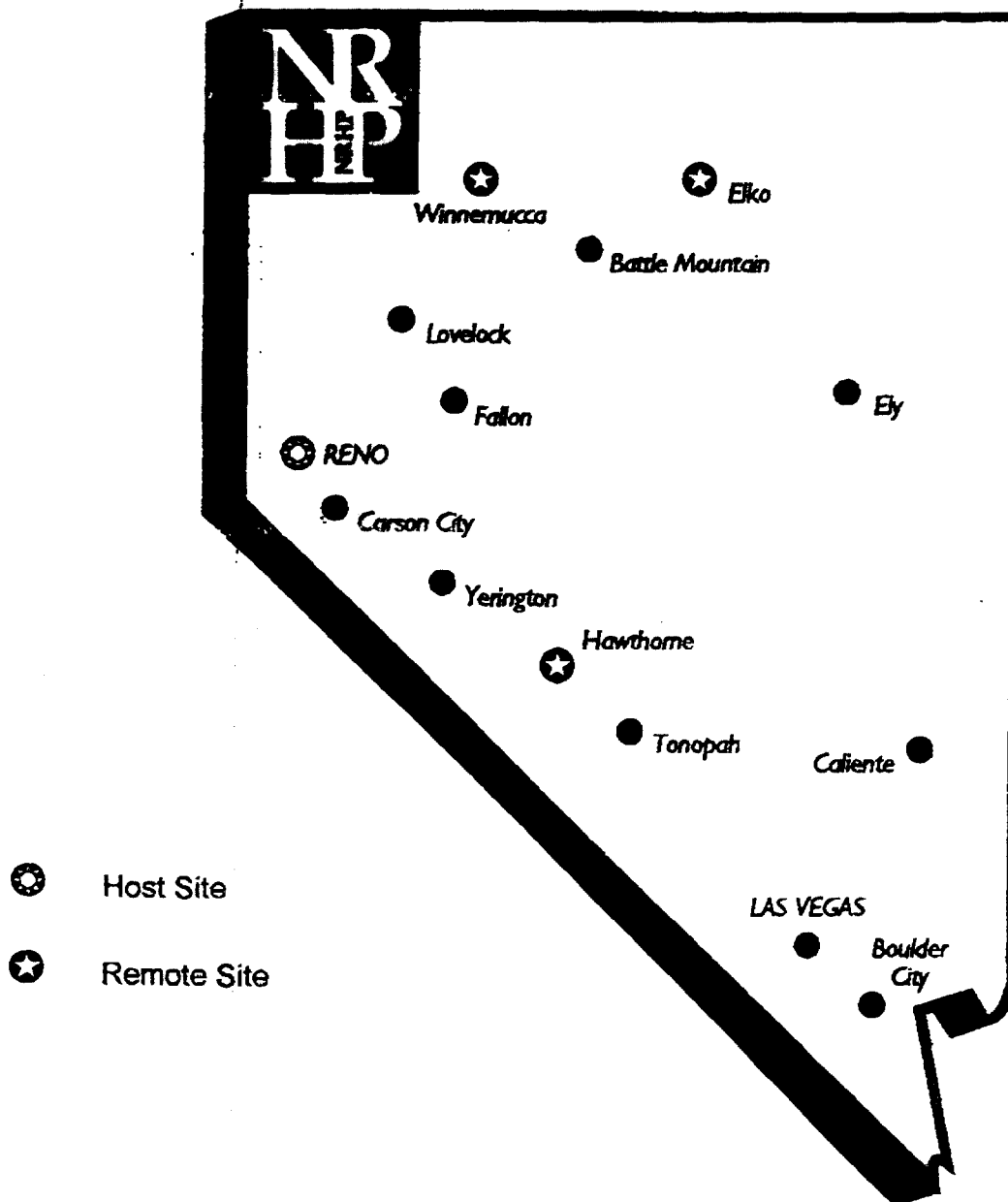
exhibit 3

TELERADIOLOGY SITE**Equipment and costs**

-	486 100 Mghz hard drive	\$ 1,500
-	8 Meg internal RAM	
-	- some with 1.5 Mghz hard drive	
-	with 540 B external disk drive	400
-	27" high resolution video monitor	2,700
-	will take 4 feeds	
-	Polycom soundstations	1,000
-	- with 2 satellite voicing	
-	cords/cabling	50
-	SMART 2000 software	500
-	28.8 Modems	
-	MVI software	10,600
TOTAL COST PER SITE		\$17,250

NEVADA RURAL HOSPITAL PROJECT CONSORTIUM

Telemedicine Network



TOTAL AREA SERVED:

94,835 Square Miles

POPULATION SERVED: **262,700+**

exhibit 5

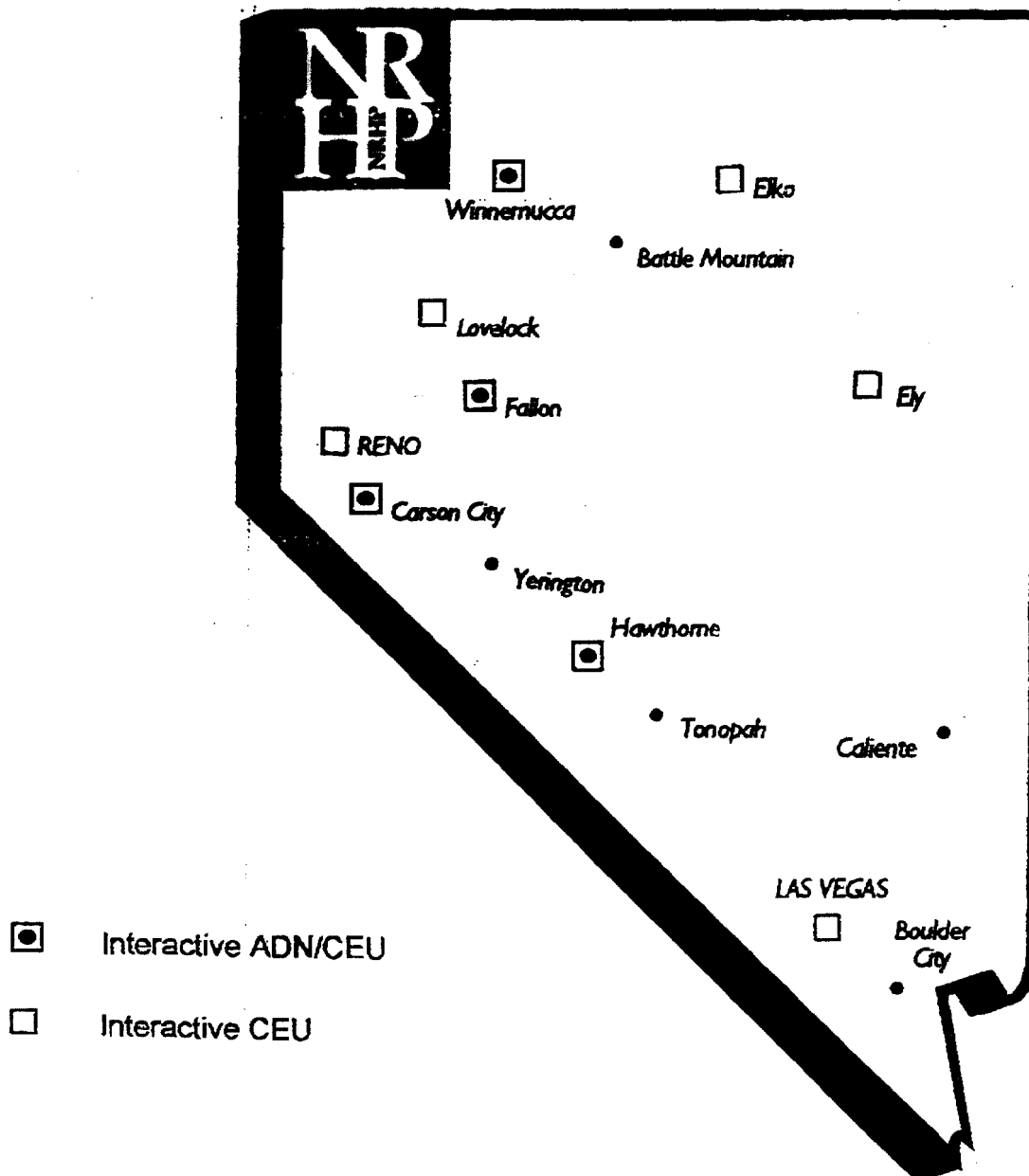
TELEMEDICINE SITE**Equipment and costs**

-	Compression Laboratory Inc. (CLI) Radiance units	\$50,000
-	audio system	
-	video camera	
-	document camera	
-	CODEC	
-	network interface	
-	Line drivers	3,000
-	Andries Teck Audio 52-05001 Stethoscopes	5,000
-	Internet Access	6,000
-	CSU	
-	router	
-	software	
-	V.35 cables and Ethernet cabling	
-	Ethernet cards	
-	unshielded cable	
-	connectors	

TOTAL COST PER SITE**\$64,000**

NEVADA RURAL HOSPITAL PROJECT CONSORTIUM

Interactive Education



TOTAL AREA SERVED:

94,835 Square Miles

POPULATION SERVED: **262,700+**

exhibit 7

INTERACTIVE EDUCATION SITE

Equipment and cost

-	SMART Conferencing System	\$17,500
-	SMART 2000 Electronic Writing Board	
-	SMART 2000 Floor Stand	
-	SMART 2000 Conferencing Software	
-	SMART 2000 Controller Card with SMART	
-	Multipoint Integrated Modem	
-	SMART 2000 Telephone Junction Box	
-	SMART 2000 Pen Tray	
-	SMART server 486DX-33 (Gateway 2000)	
-	Overhead Projector, Model Dukane 4000	
-	Polycom Audio Conferencing	
-	Compression Laboratory Inc. (CLI) Radiance units	\$50,000
-	audio system	
-	video camera	
-	document camera	
-	CODEC	
-	network interface	

TOTAL COST PER SITE**\$67,500**

exhibit 8

INTERACTIVE EDUCATION INFORMATION

DISTANT LEARNING NURSING PROGRAM

- Program began August 1993 with 23 students
- 14 students graduated with their Licensed Practical Nurse (LPN) degree in May of 1994
- 9 of the 14 opted to take the LPN Boards in October 1994
- Empty spots were filled with LPNs when second year of program began
- 15 students received their Associated Degree in Nursing (ADN) in May 1995
- All graduates are working in Nevada hospitals

CONTINUING EDUCATION UNITS

- SMART 2000 unit rotates through rural hospitals providing licensed nurses chance to work on interactive disk programs at their hospital
- Programs include
 - Assessment of Women Presenting in Labor
 - Auscultation of Normal Breath Sounds
 - Chest Trauma
 - Dysrhythmia Training and Evaluation
 - I.V. Therapy Review
 - Motor Vehicle Trauma
 - Respiratory Difficulty in Children
 - Neuro Status

BACHELOR NURSING CREDITS

- 14 rural students benefitted from interactive of Bachelor of Science courses transmitted to their communities

RURAL TELEMEDICINE SWITCH 56K SYSTEM

